

REMARKS

By this Amendment, Applicants amend claims 8, 21, 26, and 36, and cancel claims 39-40, without prejudice or disclaimer of the subject matter thereof. Claims 1-38 remain currently pending.

In the Office Action, the Examiner provisionally rejected claims 1-40 under 35 U.S.C. § 101 as double patenting of the “same invention” type with claims 1-40 of copending U.S. Patent Application No. 10/725,597. The Examiner objected to claim 21 because of insufficient antecedent basis; rejected claims 36-40 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; and rejected claims 1-40 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,529,604 to Park et al. (“Park”) in view of U.S. Patent No. 6,263,022 to Chen et al. (“Chen”).¹

Regarding the double patenting rejection under 35 U.S.C. § 101

Applicants respectfully traverse the Examiner’s “same invention” type double patenting rejection under 35 U.S.C. § 101. However, to expedite the prosecution of this application, Applicants respectfully request that the Examiner withdraw the provisional double patenting rejection of claims 1-40 of this application if the provisional double patenting rejection is the only rejection remaining in this application and permit this application to issue as a patent, or convert the provisional double patenting rejection in this application into a double patenting rejection if the copending application (10/725,597) issues as a patent. See M.P.E.P. § 804.I.B.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Regarding the objection

Applicants have amended claim 21 to recite “a base layer” to obviate the ground for objection. Accordingly, Applicants respectfully request withdrawal of the objection to claim 21.

Regarding the rejections under 35 U.S.C. § 101

Applicants respectfully traverse the Examiner's rejection of claims 36-40 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Because claims 39 and 40 have been canceled, the Section 101 rejection of claims 39 and 40 is moot.

The Examiner alleges that “[t]he claims recite a processor implementing a method. A processor executing a method that is not tangibly embodied on a computer readable medium is non-statutory subject matter.” (Office Action at 3.) Applicants respectfully disagree.

The rejected claims clearly recite structural limitations of a processor instead of a method. For example, independent claim 36 recites “ [a] . . . processor . . . comprising: a psychoacoustic module . . . ; a bit shifter . . . ; and a bit slicer . . . ,” which are clearly structural elements of an apparatus claim. The Examiner apparently misconstrues claim 36 as reciting a method implemented by a processor due to the functional language. However, “an apparatus claim with process steps is not classified as a ‘hybrid’ claim; instead, it is simply an apparatus claim including functional limitations.” M.P.E.P. § 2106.IV.B. Accordingly, Applicants respectfully request withdrawal of the Section 101 rejection of claim 36 and dependent claims 37 and 38.

Regarding the rejection under 35 U.S.C. § 103(a)

Applicant respectfully traverses the Examiner's rejection of claims 1-40 under 35 U.S.C. § 103(a) as being unpatentable over Park in view of Chen, because Park and Chen at least fail to teach or suggest all elements of claims 1-38. Because claims 39 and 40 have been canceled, the Section 103(a) rejection of claims 39 and 40 is moot.

Independent claim 1 recites a method for processing audio signals comprising a combination including, for example, "bit shifting the quantized data in the sub-bands by the respective scale factors if they exceed a threshold value." Park fails to teach or suggest at least these features of independent claim 1, as conceded by the Examiner who states that "PARK does not disclose bit shifting the quantized data." (Office Action at 4.)

Chen fails to cure the deficiencies of Park. Chen teaches "an adaptive quantization controller for use in a video encoder The adaptive quantization controller receives at least one quantization parameter from the base layer circuit and, in response thereto, determines a corresponding shifting factor for shifting a bit plane associated with the enhancement layer video data." Chen, abstract, emphasis added. However, Chen's teaching of shifting a video bit plane does not constitute "[a] method for processing audio signals comprising . . . bit shifting the quantized data in the sub-bands by the respective scale factors if they exceed a threshold value," as recited in independent claim 1 (emphasis added).

The Examiner alleges that "CHEN teaches bit shifting the quantized data in the sub-bands ('performing bitplane shifting of frequency domain coefficients', column 6, lines, 36-37) by the respective scale factors ('shifting factors are determined solely as a

function of the base layer', column 7, lines 30-31, where 'the shifting factor acts similarly to the quantization step size used in the base layer', column 7, lines 49-50) if they exceed a threshold value ('by identifying blocks or macroblocks that have . . . high quantization errors, and the like', column 6, lines 60-62)." (Office Action at 4-5.) Applicants respectfully disagree.

In the cited sections, Chen explicitly states that "frequency bitplane shift controller 270 may perform bitplane shifting of frequency domain coefficients (e.g., DCT coefficients)." Chen, column 6, lines 35-37, emphasis added. However, Chen's teaching of shifting of DCT coefficients does not constitute "bit shifting the quantized data in the sub-bands by the respective scale factors if they exceed a threshold value," as recited in claim 1 (emphasis added).

Further, in Chen, "[t]he shifting factor acts similarly to the quantization step size used in the base layer." Chen, column 6, 49-50, emphasis added. However, Chen's teaching of using quantization step size as shifting factor does not constitute "bit shifting the quantized data in the sub-bands by the respective scale factors if they exceed a threshold value," while "scale factors [correspond] to each of the sub-bands according to respective noise tolerance of each of the sub-bands," as recited in claim 1 (emphasis added).

More importantly, as recited in claim 1 and described in, for example, paragraphs [036]-[039] of the specification, the shifting factor in the invention is determined by 'scale factor' of each scale factor band. In audio coding, scale factor is not a general term, but a term to described a value calculated by Psycho-acoustics model, and is associated with each scale factor band. There is no corresponding or similar characteristic in video

or image processing such as scale factor band or psycho-acoustics model in video encoding. Thus, Chen, dealing with video encoding, cannot teach or suggest the claimed audio-scale-factor-based bit shifting features. The attached technical paper further supports the non-obviousness of the present invention with respect to audio-scale-factor-based bit shifting in audio coding.

Therefore, neither Park nor Chen, taken alone or in any reasonable combination, teaches or suggests all elements of independent claim 1. Independent claim 1 is therefore allowable over Park in view of Chen. Accordingly, Applicants respectfully request withdrawal of the Section 103(a) rejection of claim 1. Because claims 2-10 depend from claim 1, either directly or indirectly, Applicants also request withdrawal of the Section 103(a) rejection of claims 2-10 for at least being dependent from an allowable base claim.

Moreover, dependent claim 8, as amended, includes additional features such as “wherein the scale factor of a sub-band is determined based upon an original spectral energy level, a common scale factor, and band scale factor values of the sub-band.” Applicants respectfully submit that neither Park nor Chen teaches or suggests at least these features of amended claim 8.

Further, independent claims 11, 21, 28, 31, and 36, while of different scope, include similar recitations of independent claim 1. Claims 11, 21, 28, 31, and 36 are therefore also allowable for at least the reasons stated above with respect to independent claim 1. Accordingly, Applicants respectfully request withdrawal of the Section 103(a) rejection of claims 11, 21, 28, 31, and 36.

Because claims 12-20 depend from claim 11, claims 22-27 depend from claim 21, claims 29 and 30 depend from claim 28, claims 32-35 depend from claim 31, and claims 37 and 38 depend from claim 36, either directly or indirectly, Applicants also request withdrawal of the Section 103(a) rejection of claims 12-20, 22-27, 29, 30, 32-35, 37, and 38 for at least being dependent from an allowable base claim.

Conclusion

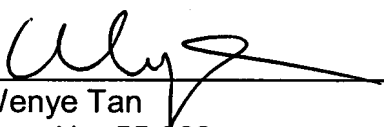
In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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GARRETT & DUNNER, L.L.P.

Dated: August 1, 2007

By: 
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Attachments: **Fang-Chu Chen et al., Scalefactor based bit shift FGS audio coding, 19th International Conference on Advanced Information Networking and Applications, Taipei, Taiwan, March 28-30, 2005.**